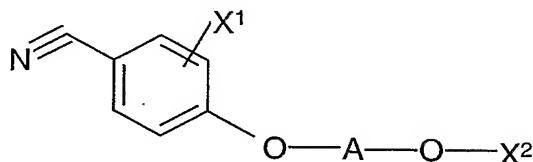


CLAIMS

What is claimed is:

1. A compound of the formula I:



the salts, solvates, and prodrugs thereof, in which;

a) X^1 is represented by halogen, cyano, $\text{C}_1\text{-C}_6$ alkoxy, haloalkoxy, or haloalkyl;

10 b) A is represented by a linear alkylene group containing from 2 to 10 carbon atoms, in which up to 6 hydrogen atoms may optionally be replaced by a substituent independently selected from the group consisting of:

15 i. halogen,
ii. cyano,
iii. hydroxy,
iv. $(\text{C}_1\text{-C}_{12})\text{alkyl}$, optionally substituted,
v. $(\text{C}_2\text{-C}_{12})\text{alkenyl}$, optionally substituted,
vi. $(\text{C}_2\text{-C}_{12})\text{alkynyl}$, optionally substituted,
vii. $(\text{C}_3\text{-C}_{10})\text{cycloalkyl}$, optionally substituted,
20 viii. $(\text{C}_3\text{-C}_{10})\text{cycloalkyl}(\text{C}_1\text{-C}_6)\text{alkyl}$, in which the alkyl and cycloalkyl moieties may each be optionally substituted,
ix. $(\text{CH}_2)_n\text{-SR}^1$,
x. $(\text{CH}_2)_n\text{-O-R}^1$,
xi. $(\text{CH}_2)_n\text{-NR}^1\text{R}^2$,
25 xii. $(\text{CH}_2)_n\text{-COOR}^3$ and,
xiii. $(\text{CH}_2)_n\text{-CONR}^4$;

c) X^2 is represented by $(\text{C}_6\text{-C}_{10})\text{aryl}$, optionally substituted;

d) n, at each occurrence, is independently represented by an integer from 0 to 6;

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- e) R^1 and R^2 are each independently represented by a substituent selected from the group consisting of hydrogen and (C_1-C_6) alkyl, optionally substituted;
- f) R^3 is represented by a substituent selected from the group consisting of hydrogen, and (C_1-C_6) alkyl, optionally substituted, and;
- 5 g) R^4 is represented by a substituent selected from the group consisting of hydrogen, and (C_1-C_6) alkyl, optionally substituted.

10 2. A compound according to claim 1 in which A is represented by ethylene, propylene, butylenes, or pentylene, any of which may be optionally substituted.

15 3. A compound according to claim 1 or 2 in which X^1 is trifluoromethyl or chloro and is located at the 3-position of the phenyl ring.

4. A compound according to claim 1, 2, or 3 in which X^2 is represented by:

20 5. A compound according to claim 1, 2, 3, or 4 in which A is ethylene or propylene and is substituted with at least one substituent represented by $(CH_2)_n-O-R^1$ or (C_1-C_6) alkyl.

25 6. A compound according to claim 1 selected from the group consisting of:

- a. 4,4'-(2S,3S)-butane-2,3-diylbis(oxy)]bis[2-(trifluoromethyl)benzonitrile])
- b. 4,4'-(2R,3R)-butane-2,3-diylbis(oxy)]bis[2-(trifluoromethyl)benzonitrile];
- c. 4,4'-(but-1-ene-3,4-diylbis(oxy)]bis[2-(trifluoromethyl)benzonitrile];

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d. 4,4'-[pentane-1,2-diylbis(oxy)]bis[2-(trifluoromethyl)benzonitrile];

e. 4,4'-[{(3-methoxypropane-1,2-diyl)bis(oxy)]bis[2-(trifluoromethyl)benzonitrile];

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f. 4,4'-[{(3-ethoxypropane-1,2-diyl)bis(oxy)]bis[2-(trifluoromethyl)benzonitrile];

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g. 4,4'-[{3-(isopropylamino)propane-1,2-diyl]bis[2-(trifluoromethyl)benzonitrile];

h. 4,4'-[{(6-methylhexane-1,2-diyl)bis(oxy)]bis[2-(trifluoromethyl)benzonitrile];

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i. 4,4'-[octane-1,2-diylbis(oxy)]bis[2-(trifluoromethyl)benzonitrile];

j. 4-[1-(4-Cyano-3-trifluoromethyl-phenoxy)methyl]-2,2-dimethyl-cyclopropoxy]-2-trifluoromethyl-benzonitrile;

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k. 4,4'-[Propane-1,3-diylbis(oxy)]bis[2-(trifluoromethyl)benzonitrile];

l. 4,4'-[{(2-methylpropane-1,3-diyl)bis(oxy)]bis[2-(trifluoromethyl)benzonitrile];

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m. 4,4'-[butane-1,3-diylbis(oxy)]bis[2-(trifluoromethyl)benzonitrile];

n. 4-({(3R)-3-[4-cyano-3-(trifluoromethyl)phenoxy]butyl}oxy)-2-(trifluoromethyl)benzonitrile;

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o. 4-({(3S)-3-[4-cyano-3-(trifluoromethyl)phenoxy]butyl}oxy)-2-(trifluoromethyl)benzonitrile;

p. 4-{3-[4-cyano-3-(trifluoromethyl)phenoxy]-1,2-dimethylpropoxy}-2-(trifluoromethyl)benzonitrile;

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q. 4,4'-[hex-1-ene-4,6-diylbis(oxy)]bis[2-(trifluoromethyl)benzonitrile];

- r. 4,4'-[*(3-methylbutane-1,3-diyl)bis(oxy)]bis[2-(trifluoromethyl)benzonitrile];*
- 5 s. 4-[*{3-(4-cyanophenoxy)-2-ethylhexyl}oxy*]bis[2-(trifluoromethyl)benzonitrile];
- t. 4,4'-[*(2S,4S)-pentane-2,4-diylbis(oxy)]bis[2-(trifluoromethyl)benzonitrile];*
- 10 u. 4,4'-[*heptane-1,4-diylbis(oxy)]bis[2-(trifluoromethyl)benzonitrile];*
- v. 4,4'-[*hexane-2,5-diylbis(oxy)]bis[2-(trifluoromethyl)benzonitrile];*
- 15 w. 4,4'-[*(2S,5S)-hexane-2,5-diylbis(oxy)]bis[2-(trifluoromethyl)benzonitrile];*
- x. 4-[*{5-[4-cyano-2-(trifluoromethyl)phenoxy]pentyl}oxy*]-2-(trifluoromethyl)benzonitrile;
- 20 y. 4,4'-[*hexane-1,5-diylbis(oxy)]bis[2-(trifluoromethyl)benzonitrile];*
- z. 4,4'-[*(3-methylpentane-1,5-diyl)bis(oxy)]bis[2-(trifluoromethyl)benzonitrile];*
- 25 aa. 4-(*1-methoxymethyl-2-phenoxy-ethoxy*)-2-trifluoromethyl-benzonitrile;
- bb. 4-(*1-hydroxymethyl-2-phenoxy-ethoxy*)-2-trifluoromethyl-benzonitrile;
- 30 cc. (1*R*)-4-(*1-hydroxymethyl-2-phenoxy-ethoxy*)-2-trifluoromethyl-benzonitrile;
- dd. (1*R*)-4-(*1-methoxymethyl-2-phenoxy-ethoxy*)-2-trifluoromethyl-benzonitrile;

ee. (1S)-4-(1-methoxymethyl-2-phenoxy-ethoxy)-2-trifluoromethyl-benzonitrile;

5 ff. 2-chloro-4-(2-methoxy-1-phenoxy-methyl-ethoxy)-benzonitrile;

gg. 2-chloro-4-(1-phenoxy-methyl-butoxy)-benzonitrile;

hh. 2-chloro-4-(1-phenoxy-methyl-propoxy)-benzonitrile;

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ii. 2-chloro-4-(1-phenoxy-methyl-butoxy)-benzonitrile;

jj. 2-chloro-4-[1-(4-methoxy-phenoxy-methyl-propoxy)-benzonitrile;

15 kk. 2-chloro-4-[1-(2-methoxy-phenoxy-methyl-propoxy)-benzonitrile;

ll. 2-chloro-4-[1-methyl-phenoxy-ethoxy)-benzonitrile;

20 mm. 4-[4-(4-cyano-3-trifluoromethyl-phenoxy)-2-hydroxy-butyloxy]-2-trifluoromethyl-benzonitrile;

nn. 4-[3-(4-cyano-3-trifluoromethyl-phenoxy)-2-cyclohexyl-propyloxy]-2-trifluoromethyl-benzonitrile;

25 oo. 4-[3-(4-cyano-3-trifluoromethyl-phenoxy)-2-cyclohexyl-propyloxy]-2-trifluoromethyl-benzonitrile;

pp. 4-[3-(4-cyano-3-trifluoromethyl-phenoxy)-2-chloro-propyloxy]-2-trifluoromethyl-benzonitrile;

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qq. 4-[8-(4-cyano-3-trifluoromethyl-phenoxy)-2-chloro-4-hydroxy-octyloxy]-2-trifluoromethyl-benzonitrile;

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rr. 4-[10-(4-cyano-3-trifluoromethyl-phenoxy)-2-methylcyclopentyl-octyloxy]-2-trifluoromethyl-benzonitrile;

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ss. 4-[10-(4-cyano-3-trifluoromethyl-phenoxy)- decyloxy]-2-trifluoromethyl-benzonitrile;

5 tt. 4-[7-(4-cyano-3-trifluoromethyl-phenoxy)-2-cyano-4-methyl-6-hydroxy-heptyloxy]-2-trifluoromethyl-benzonitrile;

uu. 4-(3-(3-hydroxy-4-fluoro-phenoxy)-propoxy)-2-trifluoromethyl-benzonitrile;

10 vv. 4-(2-cyano-4-dimethylamino-8-phenoxy-octyloxy)-2-trifluoromethyl-benzonitrile;

ww. 4-(2-dimethylamino-2-(4-cyano-phenoxy)-ethyloxy)-2-trifluoromethyl-benzonitrile;

15 xx. 4-(1-cyclopentyloxymethyl-3-(4-hydroxy-phenoxy)-propoxy)-2-trifluoromethyl-benzonitrile; and

yy. 4-(2-methyl-4-dimethylamino-8-phenoxy-octyloxy)-2-trifluoromethyl-benzonitrile.

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7. Use of a compound according to any one of claims 1-6 as a medicine.
8. Use of a compound according to any one of claims 1-6 in the manufacture of a medicament for inhibiting activation of the androgen receptor.

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9. Use of a compound according to any one of claims 1-6 in the manufacture of a medicament for alleviating a condition selected from the group consisting of hormone dependent cancers, benign hyperplasia of the prostate, acne, hirsutism, excess sebum, alopecia, premenstrual syndrome, lung cancer, precocious puberty, osteoporosis, hypogonadism, age-related decrease in muscle mass, and anemia.

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10. A pharmaceutical composition comprising a compound according to any one of claims 1-6 in admixture with one or more pharmaceutically acceptable excipients.
- 5 11. A topical pharmaceutical formulation comprising a compound according to any one of claims 1-6 in admixture with one or more pharmaceutically acceptable excipients suitable for dermal application.
- 10 12. An article of manufacture comprising a compound according to any one of claims 1-6 packaged for retail distribution, which advises a consumer how to utilize the compound to alleviate a condition selected from the group consisting of acne, alopecia, and oily skin.

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